Moody's Investors Service
Global Credit Research

November 1999

Special Comment

Contact	Phone
New York	
Marie Menendez	1.212.553.1653
Douglas Bontemps	
Joel Lustig	
Howard Sitzer	
Elizabeth Tallmadge	
Robert Konefal	
Tom Marshella	

The Internet Impact — Moody's Looks at the Credit Dynamics of E-Commerce

Summary Opinion

While recognizing the Internet's growing importance within the business and financial communities, Moody's does not regard the Internet as a line of business by itself, but rather as a medium through which business is done. Therefore, at Moody's, Internet-based companies will be monitored by analysts from traditional sectors (such as media, retail, telecommunications, and business products and services) with expertise in the fundamental business segments in which Internet-based companies hope to succeed. In order for this model to work, however, we need a core group of analysts who understand the opportunities the Internet provides and the risks that it creates to companies in their business sectors.

Whether analyzing a "traditional" company, which uses the Internet as a supplemental business forum, or a company whose business is almost exclusively related to or conducted on the Internet, Moody's analysis focuses on the likelihood the company will earn enough of a return on investment to satisfy its debt obligations. The risk to bondholders continues to be expressed in traditional terms of expected loss, which is a function of probability of default and severity of loss in case of default.

Moody's credit analysis incorporates, as appropriate, the effect of the Internet's development on the companies that we rate. Over time, we will follow-up with additional comments on the impact the Internet is having on the credit fundamentals of specific industries.

continued on page 3

Author	Associate Analyst	Editor	Production Associate
Marie Menendez	*Daniel Marx*	*David Veasey*	*John Tzanos*

PRINTED IN U.S.A.

Commerce Accelerates on the Information Superhighway

The development of the Internet, and its increasing use by businesses and consumers, is having a profound effect on how business is done and how leisure time is used. The Internet is an increasingly popular medium for communications and transactions between businesses (business to business, or "B to B") between business and consumers (or "B to C"), or between consumers ("C to C"). As Internet access has grown, so has software capability and confidence in security. As a result, the "information highway" that was initially used primarily by government and academics has expanded through use by businesses and individuals.

The Internet became more accessible as a result of development of the World Wide Web ("WWW") in the early 1990's. The Web made it possible for novices to navigate the Internet through what have now become familiar browser programs (such as Netscape Navigator and Microsoft Internet Explorer) from their personal computers. At the same time, the deregulation of the communications industry and the rapid development in technology sectors led to decreased costs of transporting information, high levels of technology integration, and reduced costs of hardware, such as personal computers, servers, and networking equipment. These influences met at the opportune time to create a significant base of potential mainstream Internet users.

It is important to remember that the total market of individual Internet users as of mid-1999 was estimated to be about 150 million people *worldwide.* A significant number, and one which is growing rapidly, but one which is still smaller than the number of consumers worldwide that are within reach of Wal-Mart's stores (Aa2 senior unsecured rating). However, the fact that Internet users represent primarily business entities or consumers who are believed to be wealthier or more sophisticated than the norm makes them attractive to anyone with a product to market.

Internet Factor in Credit Analysis

As the Internet has become a more important factor in commerce, it has weighed more heavily in fundamental credit analysis. Companies are always measured in context: in context of the competitive and cyclical factors of their industry, in the context of the factors influencing their customers, and of the macroeconomic, geographic, political, and demographic factors that influence their prospects. The Internet has rapidly changed the tools and technology available to many industries. By diminishing the importance of geography and easing information transparency, it has also given rise to competitors and intermediaries who might not otherwise have been able to reach the customers of their "traditional" counterparts as directly as they can today.

In short, the development of e-commerce is challenging existing barriers to entry for many business segments, and creating new ones based on the changing expectations of customers.

THE INTERNET IS A MEDIUM

Moody's approach toward analyzing the impact of the Internet on business recognizes that it is a factor for "traditional" companies as well as for "Internet-based companies," whose business is almost entirely related to or carried out on the Internet. MindSpring Enterprises (B1 senior implied rating) and Amazon.com (Caa1) are examples of the latter. Traditional" businesses, such as brick-and-mortar retailers, security brokers, or business supply companies, use the Internet as an alternate forum to reach customers and take orders, much as they use catalogs to advertise their offerings and expand their customer reach.

Moody's analysis for all of these companies focuses on the fundamental factors that determine whether the company can earn a sufficient return to service and repay debt obligations. Whether a company operates on the Internet or in traditional marketplaces, Moody's analysis focuses on the risk, volatility, and uncertainty of the company's business segment; on its competitive landscape; on its capital structure and financial flexibility; and on the strategic course that management charts as well as the ability to execute that strategy. The basic concepts of attracting customers and fulfilling demand in a way that brings them back remain the same irrespective of venue. Internet-based businesses are still largely in the development phase; the risk resulting from this uncertainty figures largely in Moody's analysis.

Rise of Internet-Based Companies

Only five years ago – an eternity in the high-tech arena – Internet users deplored the first commercial advertisement on the Internet. They argued that the Internet's proper role was to allow for free exchange of information, and not to serve as a marketplace.

Seems quaint, doesn't it? In 1995, the front page of the Wall Street Journal heralded a company called Amazon.com, which intended to service a potential worldwide audience of Internet users while using minimal physical assets. Marketers of music products followed. Shortly thereafter, early search engines such as Yahoo! and AltaVista (called "spiders" for their ability to navigate the Web) began selling advertising space on their sites.

Public demand for Internet access at a reasonable cost led to the development of Internet service providers ("ISPs") and caused existing on-line services like America Online (Ba1 senior implied rating) to add Internet access to the proprietary content they offered customers. The extraordinary valuations which investors awarded to the Internet pioneers encouraged some traditional businesses to press their own Internet efforts forward, and even attempt to redefine themselves as "Internet companies".

CATEGORIES OF INTERNET COMPANIES

Today's Internet-based companies broadly occupy three categories, most of which are sub-segments of traditional industries:

1. **E-commerce and content providers:** These companies operate as sellers of goods and services or intermediaries, either B-to-B and B-to-C. Examples include Amazon.com (Caa1 senior implied rating), priceline.com, E*TRADE Group, and Chemdex Corp. Content providers are companies whose main product is information delivered over the Internet, and whose revenues consist largely of subscription fees or advertising revenues. Examples include, America Online (Ba1 senior implied rating) TheStreet.com, VerticalNet.com, and The Motley Fool.
2. **Internet service providers (ISPs):** Companies that provide distantly-located customers with access to the Internet through their own servers. These companies continue to expand their product sets to include Internet enabling services, such as web hosting and e-commerce systems support. Examples include MindSpring Enterprises (B1), Verio (B2), PSINet (B2), and America Online (Ba1).
3. **Information technology providers:** The hardware, and software, and services companies that provide the physical and virtual infrastructure of the Internet, and more broadly which provide the raw materials such as silicon that goes into the technology. These companies include IBM (A1 senior debt rating), Sun Microsystems (Baa1), Hewlett Packard (Aa2), Cisco Systems, Inktomi, and Exodus Communications.

ARE INTERNET-BASED COMPANIES DIFFERENT?

Moody's does not believe fundamental analysis differs between traditional and Internet-based companies. Companies that do business on the Internet face barriers and opportunities that are unique to the medium, but which also parallel the experience faced by other start-ups, which have survived several generations of technological and cultural change.

The biggest question facing companies engaging in e-commerce today is what strategies will turn out to be the most successful in operating in the mixed Internet and traditional arenas they compete in. The speed with which technology is changing, and the frequency with which competitors emerge and change, causes companies to commit to e-commerce strategies that are costly in terms of time and money, even though there may be no predictor about a given strategy's success.

By using the Internet as a marketplace, companies can operate in a way that cannot be duplicated by traditional methods. For example, a retailer with a good data-capture system can track what specific customers buy. An e-tailer has the opportunity to track how each customer shops, and track what merchandise is sought or rejected, as well as what merchandise is purchased. Capturing and sorting this amount of customer data could create a formidable sales engine that can not be duplicated by traditional sales methods. It could also help companies forecast demand with unprecedented accuracy, leading to extremely efficient capital utilization, labor planning, and facility needs. Creating this infrastructure is expensive, however, and we have no way to determine whether early operators are spending more than these technologies can ultimately recoup.

Rating Factors

Some of the traditional analytical factors that Moody's uses to analyze Internet-based companies and the e-commerce efforts of established companies include:

Financial Profile

Ultimately, Moody's credit opinions focus on a company's ability to repay obligations. The financial analysis of an Internet-based company, or of the Internet-focused subsidiary of a traditional company, keys in on its potential to earn a satisfactory return on invested capital.

Because many Internet-based businesses are still startup operations with little operating history, Moody's financial analysis focuses on: 1) the company's capital structure, particularly the balance of debt and equity financing; 2)access to capital to finance growth and financial flexibility to survive competitive challenges; 3)and opportunities and limitations that could develop as companies and their markets mature. As with other growth companies, analysis of operating cash flow looks at both the cash generated from maturing operations and the investment required to maintain the growth strategy.

History of Company, Market, and Management

Uncertainty usually carries negative credit implications, and is a large factor in analyzing e-commerce activities. The Internet itself is still at an immature stage; the potential of e-commerce and the success of differing strategies are still unknowns. Similarly, most Internet-based companies are new entities, with relatively short corporate histories, and therefore subject to internal risks as well as marketplace risks. Some, like on-line booksellers and brokers, are trying to expand or capture a share of existing markets. Other companies, like eBay or priceline.com, are trying to introduce customers to new ways of doing business. Still others, such as search engines and other content sites, are hoping that advertising will be a source of profits for them as it turned out to be for the television networks. The size of the market for their services is still unknown, and early customer excitement may not translate into long-term demand. This same question applies to analyzing investment in e-commerce activities by traditional companies.

Quality of management is a key consideration, and one of the hardest to measure. Management history of a startup companies may be short, sometimes with no track record of business operation, or consist of entrepreneurs who operate outside of conventional corporate structures. Especially in a start-up situation, the company's ability to plan, execute and adjust to the changing environment is crucial.

Competitive Factors and Barriers To Entry

E-commerce providers compete against traditional providers, as well as other e-commerce companies. E-commerce can erase traditional competitive distinctions, such as geographic location, but creates other competitive factors. Ultimately fulfilling customer needs remains the primary measuring stick. As perceived by customers, better execution can mean any combination of ease of use, more detailed or timely information, or better fulfillment. Lower prices have been an entry strategy for many e-commerce efforts. Moody's believes the attraction of low prices will ultimately give way to a balance of "fair pricing" and good service, as it has in the traditional marketplace.

Name recognition is of paramount importance in the e-commerce environment, although the short history of many Internet-based companies makes it difficult to demonstrate franchise value. Traditional competitors can sometimes transfer the recognition and reputation of an existing name to an e-commerce effort. Catalog retailers such as Lands' End, and stockbrokers such as Charles Schwab, used the name recognition and customer base generated by their traditional operations to become Internet leaders.

First-mover advantage helped Yahoo! achieve profitability within a short period and maintain its independence while several competitors were acquired by strategic partners. And yet, it must still compete for advertising revenues against traditional broadcast and print companies, as well as against direct on-line competitors.

Execution of Strategy and Access to Capital

Getting the customer is only the first step. Keeping the customer requires good execution; remaining in business requires an appropriate cost structure. Arguably, customer expectations of e-commerce providers may be higher than for their traditional counterparts because of the appearance of higher technology, which brings with it an assumption of better information flow and distribution capability. However, the nascent character of e-commerce operations also means they may not have the volume of business necessary to operate at low cost. Adequate access to capital to finance operating needs and longer term growth is a critical credit factor. The volatility of equity values of Internet-based companies raises questions about whether today's relatively lofty values can be sustained in the long term.

Moody's analysis of a company's execution ability focuses on the ability to fulfill customer expectations, systems adequacy and redundancy, and product sourcing ability. Evaluating technology takes on a special dimension for e-commerce companies. For companies operating in the virtual marketplace, "technology" encompasses the hardware and software infrastructure, and the user interface that creates the customer's environment.

Market Presence

Assessing the effectiveness of a company's market presence weighs heavily in Moody's credit ratings, , and our analysis extends to a company's Internet strategy. As access to the Internet by businesses and consumers has increased, so have expectations of the form and content of the information and services that companies should provide. Customer perceptions of a company's Internet site are, in effect, virtual visits to a company's location, and therefore weigh heavily on the perception of the company itself. In the case of companies that do business almost exclusively on the Internet, the site delivered to a potential customer's computer monitor is, in fact, the only business location the customer will ever see.

Internet Is Changing Traditional Business Methods

There are many credit implications to a company's Internet presence, starting with what constitutes an appropriate presence and the right level of spending to achieve it. A company's Internet site should fulfill customer expectations for the industry as well as for the company. Does its public expect an information site or fully interactive ordering ? Does more information clutter the screen and delay download time, or does it provide a necessary entertainment factor? Does a site fill a niche by providing services or information that were not feasible through traditional media? A company may be at a competitive disadvantage by providing too little on its site, or at a financial disadvantage by devoting more resources than necessary.

SEGMENT IMPACT VARIES

E-commerce, previously provided through direct dial-up services or consolidators, such as CompuServe, predates commercial usage of the Internet. However, the broad availability of the Internet, and the Web's independence from specific service providers, expanded the audience to anyone with an Internet connection.

This quick development has led to rapid shifts in competitive positions among companies doing business on the Internet. As e-commerce continues to develop, some industry segments are likely to feel more of an impact than others. Moody's believes the following traditional business segments are the most likely to feel the impact of the Internet's development:

Business to Business

Providers of business goods and services are already finding traditional business methods being enhanced with the entrance of new competitors and the emergence of new technologies being adopted by their customers. Intermediaries and consortia, such as Chemdex Corp., PaperExchange.com, SciQuest.com, Inc., and MetalSite, L.P. are also using the Internet to provide greater levels of information or price transparency, and to shorten the communication chain between potential sellers and buyers of commodities and specialized products.

Media and Telecommunications

Traditional broadcasters and publishers increasingly compete for subscriber fees and advertising revenues with Internet-based companies and services. The desire for Internet access is also blurring the lines between providers of communications services, and has given rise to market segments that did not previously exist, like Internet services providers ("ISPs") and portals. The trend of new company development followed by consolidation will likely continue.

Retailers and Related Services

The Internet's impact on retailers was felt first by sellers of high-tech products and by catalog-based retailers who most easily transitioned to the Internet medium. The development of "shopping bots" that lower the effort of searching the Web for product offerings and price comparisons raise the bar in terms of capturing the consumer's loyalty.

Hardware and Software Companies

High technology companies have been changing the focus of their products and services. The need to access the Internet has changed the marketing and product focus of information technology companies, including hardware and software manufacturers, as they anticipate the developing needs of their customers.

Financial Services

Financial service companies, including mortgage providers and investment services, are increasing their Internet presence to service existing customers and to attract new ones. Internet-based competitors and intermediaries have effectively competed with promises of convenience and pricing transparency.

Commercial Airlines

Airlines are using their Internet sites to manage capacity and deliver tickets in a cost effective manner. However, the airline companies may also face increased price transparency as a result of intermediaries such as Sabre Inc.'s Travelocity.com and Microsoft's Expedia unit.

Conclusion

The impact of the Internet on commerce cannot be under-estimated, since it will likely continue to change the way business is done for years to come. Its impact may be matched in modern times with such significant developments as the railroad, the telephone, and the spread of broadcast media. However, the challenges and opportunities inherent in operating on the Internet will be only one of the factors used in analyzing any company. Each company must be analyzed on its own merits, which include realistic business planning, its operating and fulfillment capabilities, and its capital structure. Competitive strengths and access to capital will also be key factors, particularly in fast-changing industries. Moody's will continue to analyze the changes which this latest medium brings to the industries and companies which it affects, rather than treat the medium as a separate industry by itself.

To order reprints of this report (100 copies minimum), please call 800.811.6980 toll free in the USA. Outside the US, please call 1.212.553.1658.

Report Number: 51022